Effective redesign strategies for tourism management in a crisis context: A theory-in-use approach

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ABSTRACT

Fundamental crises transform the tourism environment. To achieve business continuity, hotels have redesigned their operations with innovative strategies, introducing new protocols, and launching branded programs promising enhanced quality of the travel experience, by collaborating with well-known health and hygiene experts. Using a grounded theory approach, we identify three hotel redesign strategies used in practice (compliance, extensive and partnership redesign). Based on these insights, we further empirically investigate how redesign strategies affect customer perceptions. Through a quasi-experimental design, we find that service redesign influences hotel image and time frame travel. The results differ by the redesign type and the crisis dimension most relevant to tourists (social versus health), such that extensive and partnership redesign, as versus compliance redesign have a significant impact only for health-oriented individuals. Additionally, our findings highlight that redesign efforts to respond the current crisis can be perceived differently by an individual's risk perception and gender.

1. Introduction

Few contexts have determined a swift and immediate reaction, spanning multiple levels within an organization as the Covid-19 crisis has done for the players in the tourism and hospitality industry. Overnight, tourism sectors had to scramble to re-envision the entire processes that underlie their operations, in such a manner that these efforts will support continuing interest of travelers and achieve a credible safety image (Zenker & Kock, 2020). However, across the national and international contexts, the tourism and hospitality industry responses are varied and even idiosyncratic. These responses range from doing the required (i.e. complying with official guidelines) to a complete overhaul of the internal policies and procedures, driven by partnerships with stakeholders in many areas from information technology, consulting, FMCG (Fast-moving consumer goods), and health care.

Unfortunately, there is little literature to guide practitioners or scholars about what are the innovative approaches to redesign that are most effective in large-scale tourism and hospitality operations redesign. The current situation offers, however, an interesting context to study the most effective strategies enacted, as redesign efforts have been implemented at various levels by all tourism operators and, due to the short

response time span, the redesign implementation was done almost simultaneously. Given this context, we argue that a realistic approach to studying redesign responses and their effectiveness is suitable and necessary. This approach builds on a realist evaluation as 'a methodological orientation, or a logic of inquiry' (Pawson et al., 1997; Pawson, 2006) grounded in a realist philosophy of science. Realist principles can extend the range of questions answered by other methods, from 'what works' or 'did this work' to 'for whom, in what contexts, in what respects, to what extent and how' does or did this work? We therefore study how the integration of realist principles into existing processes and policies for the design of new policies, procedures or processes in tourism is ultimately perceived by travelers. This approach is rather novel in tourism and hospitality yet has been successfully applied in other areas i.e. public policy (Westhorp et al., 2016), health care services (Gale et al., 2014), leadership (Storey & Holti, 2012) and is popular in business process redesign literature (i.e. Sarker & Lee, 2002; Xiang et al., 2014).

Therefore, the objective of this paper is to advance the tourism management literature by identifying the most effective strategies that relate to hotel image and travelers' intention to travel. We achieve this goal by conducting two studies. First, by using a grounded theory

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approach to uncover the realistic 'theories-in-use" (Argyris & Schön, 1997; Zeithaml et al., 2020) of crisis response, we qualitatively extract the types of service redesign strategies enacted in tourism as a result of a crisis (COVID-19) (Study 1). Through this exploratory research, we are able to state theoretical predictions. Based on these theoretical insights we then construct a survey (Study 2) to empirically test the realistically-derived propositions. Study 2 investigates, thus, how hotels' responses to the crisis, by redesigning their service, relate to travelers' responses to the perceived crisis (social versus health focus), in terms of hotel image and future travel time frame. We further extend these theoretical insights by testing boundary conditions identified in the literature as relevant to a travel situation (i.e. risk aversion, gender).

Across two studies we find that redesign strategies for tourism management are most effective when they do maintain a customer focus at their heart (are either built on internal capabilities and brand identity, and on externally based visible partnerships). However, these strategies can remain unrewarded if the ultimate traveler is perceiving the crisis as having a relevant social dimension, rather than a relevant health dimension.

We contribute to the literature by advancing knowledge on tourism redesign strategies, dimensionality of crises in tourism and establish relationships between these and traveler perceived hotel image and future travel intentions, with implications for tourism operations and communications. We first start with a literature review of the crises in tourism and the informing theories for crisis response. We then proceed to the introduction of the theories in use approach, and then present the design and results to an empirical study. We conclude with discussion, limitations and directions for future research.

2. Crises in tourism

Natural/social diseases and disasters, such as the September 11 attacks, Boston Marathon terror, MERS, SARS or Haiti earthquake have damaged in the tourism industry (Lo et al., 2011; Zenker & Kock, 2020). Such crises not only devastate the tourism resources and attractions in the local communities, they also threaten travelers, and raise fears of travel restrictions (Baum & Hai, 2020; Murray & Schaller, 2010). The Covid-19 outbreak puts people in danger from health and safety, disrupting people's daily lives and halting the planning of future events (Ducharme & Aguilera, 2020). The tourism industry has been greatly damaged as a result of pausing almost all activities. According to the World Tourism Organization, international tourism, including the number of travelers and revenues could decline up to 80% over a year of 2020 (UNWTO, 2020). Air travel was restricted; cruise ships could not leave ports; restaurants and hotels were forced to close; and destinations were lockdown to keep social distancing (Baum & Hai, 2020; de Bellaigue, 2020; Gursoy & Chi, 2020). The tourism industry is especially vulnerable to a crisis as is ruled by the strict regulations and restrictions (Zenker & Kock, 2020). The prolonged pandemic has thrown the tourism industry in financial crisis, forecasting lower occupancy rate and higher job loss than in the 2001 recession and 9/11 (AHLA, 2020). To revive the tourism industry and gain back the traveler's rights to travel, it is necessary to change travelers' behaviors and tourism sector' service approach (Baum & Hai, 2020; Zenker & Kock, 2020). As an important part of tourism, hotels attempt to recover this disastrous situation with redesigned service as they reopen the business. However, it is necessary to develop theory that successfully informs about the effectiveness of these approaches. Therefore, we proceed by first identifying and extracting the strategies applied by hotels, following the logic that realistic approaches are rich in information and are reflective of managers' experiences.

3. Study 1: Theoretical background

3.1. Using grounded theory to identify the theories-in-use

In their seminal work, Argyris and Schön (1978, p. 250) describe how theories in use (or theories of action) can inform theory construction and development. "Theories of action are at the core of human competence, self-esteem, and self-efficacy. Individuals gain confidence by acting in ways that they and others evaluate as effective. Although theories of action are not theories about some objective truth, they do make claims about how to act effectively - indeed what is effective in the first place for a particular individual or group. These claims must be subjected to the most rigorous tests available, not only because that is good science but also because we as researchers owe it to practitioners who may use the knowledge produced by our research and to the people who receive services from the practitioners."

Under conditions of dealing with complex and threatening contexts, such as an unprecedented crisis, organizations learn quickly to act within the confines of their observable context. Therefore, observing how tourism sectors act when facing a crisis can inform theory with insights that may otherwise be less visible. In order to uncover the existing theories-in-use, we employ a grounded theory methodology.

Thus, we use the 'theories-in-use' approach to uncover valuable theoretical and practical insights and purposefully organize them to inform hotel services redesign strategies. This approach is appropriate because the complex nature of tourism and hospitality systems means that evaluating services redesign is challenging, rendering it difficult to isolate the effects of individual changes on outcomes. Realist evaluation concentrates on the context-mechanism-outcome pattern to reveal what works for whom and under what circumstances. Therefore, a service redesign must take into consideration the ultimate customer, but, by focusing on the underlying mechanisms of change, findings tend to be more generalizable, thereby increasing learning across policy, practice, and organizational boundaries (Pawson, 2006; Gale et al., 2014).

Informed by the grounded theory methodology, during April–July 2020 we collected publicly available data referring to new protocols, practices and policies implemented in hotels following the Covid-19 crisis, that were focused at achieving operational redesign. The collected data includes official statements, announcements, and news articles to describe newly adapted practices to respond the crisis. We then coded the identified protocols, procedures, policies to arrive at three different theories-in-use employed in the hotel business for service redesign. Table 1 provides a sample list of codes which helped identify the elements that drive the redesign goals in tourism.

3.2. Methodology

3.2.1. Sample and data collection

Consistent with other exploratory studies (i.e. Homburg et al., 2017; Malshe & Sohi, 2009), we collected the industry reports, hospitality analysts' blogs and hospitality providers press releases related to the operational updates regarding hotel services during and post-Covid-19. We terminated the sampling process when no new insights emerged from the field data, that is, when we reached theoretical saturation (Glaser & Strauss, 1967, pp. 1–19; Strauss & Corbin, 1998). During a 3-month period, we collected information addressed in brand websites from 22 major hotel operator groups, such as Accor, Hyatt, MGM Resorts, Hilton, Marriott, Four Seasons, etc. For each hotel operator group, we collected the hotel official statements and descriptions of new procedures, policies, and protocols implemented. In addition to the official information, we collected information from official membership organization and professional magazines that featured additional information and commentaries on the official hotel changes. This corpus configuration is consistent with the requirements for exploratory research (McCracken, 1988). Fig. 1 provides an overview of our grounded theory research procedure. After consulting the extant

Table 1
Exemplary coding results of the grounded theory research procedure.

Initial coding (examples)	Focused coding categories	Theoretical coding (themes)
Achieving task completion; checking temperature before starting service; dedicated staff for tasks; frequency of task completion	Employees roles and responsibilities	Compliance Redesign
Emphasize best practices; contactless operations 'wherever' possible	Product related aspects (Quality)	
Compliance is validated by independent audits	Certification (External)	
"do not come to our […] destinations if … "	Customer roles and responsibility	
Face coverings 'required' in all public spaces; "In accordance with CDC and WHO guidelines"; comply with government specified distancing measures; expectations based on local laws	Official standards implementation	
Follow industry standards; Expanded commitment to cleanliness	Task related aspects/ Benchmarking	
Aligns with expert protocols; international health care experts to inform enhanced procedures; ongoing guidance; cross-functional panel of trusted medical and industry advisors	External Validation	Partnership Redesign
Beyond our industry leading cleaning standards; Unparalleled	Outside Recognition	
Having a portfolio of products from [Company]	Product/Brand identification	
Redefining our cleaning and safety standards; Actively monitor and evolve our solutions	Knowledge legitimacy	
Changed expectations; Measures beyond our industry-leading cleaning; customer relationships; personalized care	Customer-focused interactions	
Team members training; supply chain partners; relationship with others (offerings toward local population)	Non-customer focused interactions	
World leader in testing, inspection and certification; having successful partners	Partner status/Brand	
Enhanced cleaning technologies including electrostatic sprayers; telemedicine	New Technology Adoption	
Having mutual competitive advantages	Competition related aspects	Extensive Redesign
Requiring that surfaces are treated with hospital-grade disinfectants	Results driven	
enhancing sanitation guidelines and training videos for associates; "guests' expectations have changed"; guests control how they engage with employees	Policy and protocol design-thinking	
Partitions at front desk; disinfectant mats at entrance; room	Physical evidence focus	
Self-inspection; creating new positions (hygiene manager)	Employee empowerment	
Enabling safe social interactions; examine the hotel journey – from pre-arrival, to guestrooms, lobbies and spas, restaurants and meetings space; limited housekeeping entry	Service delivery issues/capabilities	

literature related to the concept of hospitality service redesign, we were able to develop and implement our coding guide.

3.2.2. Data analysis

We conducted data analysis in three stages. In the first stage, during initial coding (Charmaz, 2008), we applied in-vivo coding procedure and analyzed the data line-by-line to identify relevant concepts (i.e.

'redefining our cleaning and safety standards'), based on the actual language in the press releases and industry/analysts reports, and then reduced the data to initial concepts. During the second stage of the analysis, specifically focused coding (Glasser, 1992; Holton, 2007), we reassembled the initial codes into categorized (grouped) coded data based on thematic similarity of their meaning (e.g. employee roles). Finally, during the final stage of the analysis, we employed a theoretical coding process, that involved an active theoretical and conceptual matching between the emerging grounded theory themes of service redesign, and the literature driven conceptualizations of service redesign. Two researchers independently coded the data, and then during the theoretical coding, the researchers established the agreement percent and resolved all the differences in coding, until unanimous convergence was attained. Table 1 lists categories and themes that emerged from this procedure. We expand on our findings next.

3.2.3. "The Compliance (baseline) Redesign" theory

Our grounded theory study identified and articulated concepts related to and forming what we see as "The Compliance Redesign" theory-in-use, held by practitioners regarding hospitality service redesign. This theory is rooted in the logic of compliance and, within this perspective, the externally set official guidelines and procedures (at the state, government, country level, etc.) are seen as the independent force determining redesign at different levels of the organization. This compliance perspective encompasses situations where the strategic choice of following outside imposed procedures deterministically lead to certain hospitality organizational forms or characteristics. This perspective manifests itself in the omission of a purposefully driven redesign strategy and the omission of the driving role of human perspective with respect to the redesign objectives. Examples of these procedures include a simple and non-detailed description of the procedures referring to physical evidence, with less emphasis on the process or people training. In general, this theory accommodates an outside driven re-action rather than pro-active redesign. For example, one of the protocols stated: "If an associate is alerted to a presumptive case of COVID-19 at the property, the property team will work with public health officials to follow the appropriate actions recommended." An important aspect of this "Compliance" theory in use on hospitality service redesign is that it sees this predominantly outside-in approach as necessary and sufficient for service redesign. To summarize, the compliance perspective theory-in-use holds that, for effective service redesign, the service providers must first identify the new guidelines and comprehend their unique properties/requirements and, second, reactively find organizational problems that require redesign. In addition, this view also hold that the object of redesign is incorporation of new guidelines, using protocols redesign to make changes in protocols without making major modifications to the entire organization. Based on this, we offer the following practitioner belief statement:

Proposition. *Successful integration in the existing structure of external guidelines guarantees the effectiveness of hospitality service redesign.*

3.2.4. "The Partnership Redesign" theory

Our grounded theory study identified and articulated concepts related to and forming what we see as "The Partnership Redesign" theory-in-use, the second theory-in-use held by practitioners regarding hospitality service redesign. This theory has its roots in the logic of dynamic interplay between stakeholders, context, information and technology. Within this perspective, the externally set guidelines and procedures are seen as only one of the forces determining redesign at different levels of the organization. However, these are only seen as necessary, but not sufficient to achieve a balance between the multiple (i.e. technologically or socially oriented) views. This partnership perspective encompasses situations where the strategic choice of building on the interactional aspects of multiple perspectives driven procedures will deterministically lead to certain tourism organizational
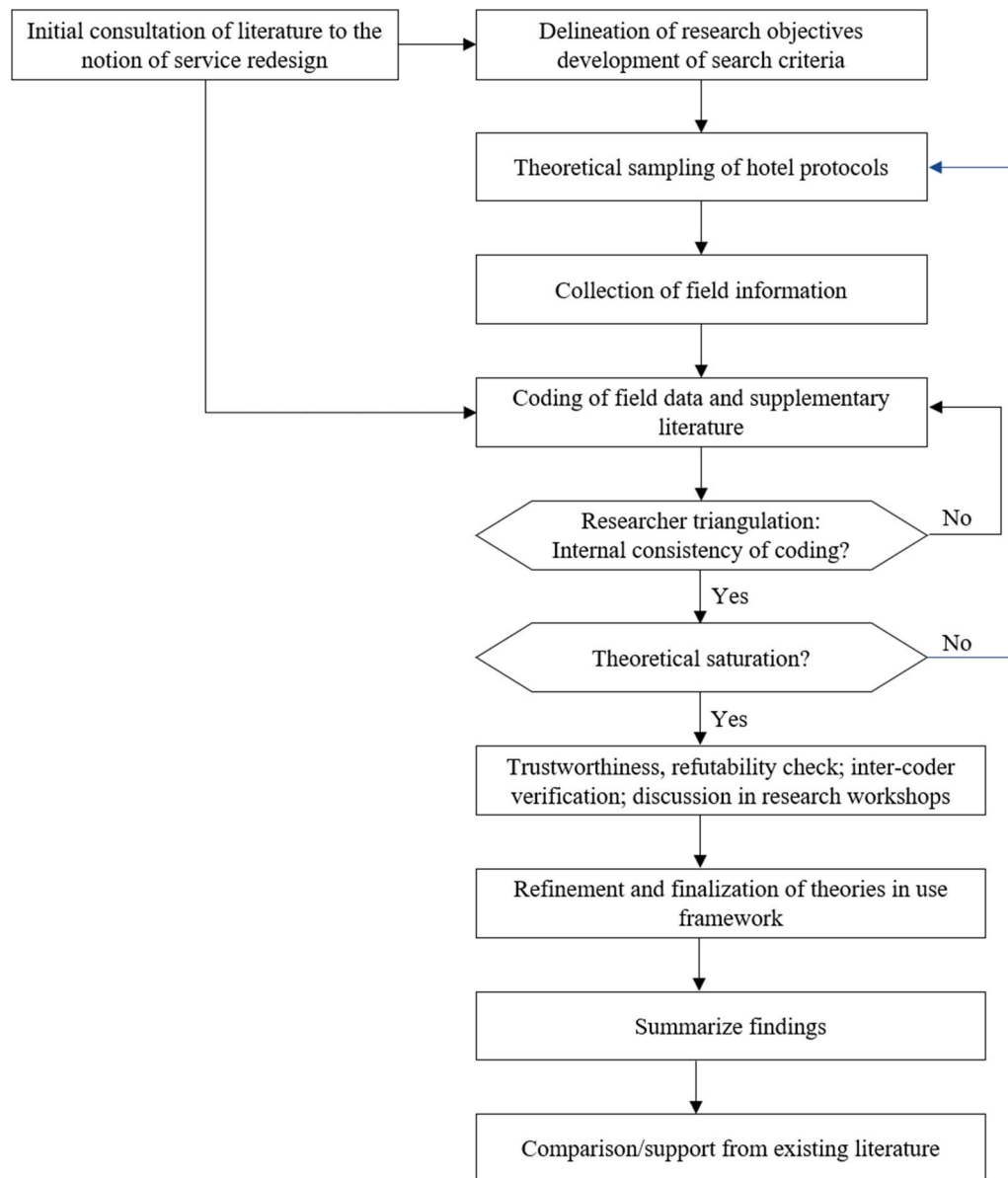
Fig. 1. Research procedure.

forms or characteristics. This perspective manifests itself in the inclusion of a purposefully driven redesign strategy and the inclusion of the driving role of human perspective with respect to the redesign objectives. Examples of these procedures include a complex, and detailed description of the procedures referring to physical evidence, with major emphasis on the process or people training, information and technology integration, clear articulation of the features and capabilities of the integrated perspectives along with the brand names. In general, this theory accommodates an inside driven-outside guided pro-active stance on redesign. For example, one of the protocols stated:

"In a first for the hospitality industry, the discerning guests of [..] Hotels will be reassured by an accreditation by […]. [..] Hotels is also partnering with […], one of the world's leading certification bodies, to ensure stringent clinical levels of hygiene and safety. These assurance certifications will stand testimony to the rigorous hygiene protocol."

"[…] is a unique programme designed in collaboration with medical professionals and disinfection experts to further enhance the existing hygiene & cleaning protocols. The stringent program specifications reassure guests of visibly stringent cleanliness and disinfection processes which benchmark clinically hygienic standards, offering guests' unparalleled comfort with peace of mind"

"[…] is set to redefine the cleanliness protocol"

"We understand that our guests' expectations for hotel cleaning and disinfecting have changed. That's why we've taken additional measures beyond our industry-leading cleaning standards by partnering with RB, maker of Lysol & Dettol, to develop our […] program. This innovative program builds upon our already rigorous cleaning standards by providing enhanced training for Team Members, increased cleaning of public areas and adjusted food & beverage service, to ensure our guests enjoy a worry-free stay."

The drivers of this theory are quality partnerships, either in products/ingredients, collaborators in terms of agencies, consultants, hospitals, and the best/custom technology, informed by the social context in which redesign occurs. The selection of the stakeholders involved in the redesign process is carefully orchestrated and emphasizes the strengths and the positioning of the hospitality service providers. To summarize,

the partnership theory-in-use holds that, for effective service redesign, the hospitality provider must first identify the best fit between technology, human resources, products/ingredients and the social context. In addition, this view also emphasizes the flow of information, the collaborative aspect of functional units for effective redesign. Based on this, we offer the following practitioner belief statement:

Proposition. *Effective redesign of service provision can be accomplished only if an understanding of relevant stakeholders and the service provision within the social context is used during redesign, by enhancing the service process through the use of technological, informational and social enablers.*

3.2.5. "The Extensive Redesign" theory

The third theory-in-use emerging through our grounded theory study identified and articulated concepts related to and forming what we see as "The Extensive Redesign" theory-in-use. This theory is rooted in the logic that redesign outcomes occur due to human motives and human action. Within this perspective, the externally set social context and social factors are essential in bringing about organizational outcomes. This perspective encompasses situations where the strategic choice of following inside driven procedures will deterministically lead to certain hospitality organizational forms or characteristics. This perspective manifests itself in the inclusion of a purposefully driven redesign strategy and the inclusion of the driving role of human perspective with respect to the redesign objectives. Examples of these procedures include a detailed description of the procedures referring to people management, with higher emphasis on the process or people training, development for both organization and in the extended social context. In general, this theory accommodates an inside driven pro-active redesign. For example, one of the policies stated: "we assure guests of a clean and comfortable stay while simultaneously protecting the health of our hotel partners and their staff, who are serving the guests day in and day out." Another statement includes the linking of the purpose of the hospitality provider:

> "Guided by its purpose to care for people so they can be their best," with the holistic and socio-centric approach to redesign: "[…] will examine the hotel journey – from pre-arrival, to guestrooms, lobbies and spas, restaurants and meetings space."

> "reimagining several aspects of the guest experience through technology to transition current processes into contactless options for guests that eliminates or reduces the need for waiting in line".

> "The […] resort will offer several servicing options based on the level of contact and attention guests wish to receive throughout their stays, such as contactless in-room dining and curbside check-in. New experiences will place an emphasis on outdoor recreation, including a new twist on dining that delivers curated picnic basket meals, contactless, for guests to enjoy throughout the resort's grounds."

An important aspect of this "Extensive redesign" theory in use on hospitality service redesign is that it sees this predominantly inside-out approach as necessary and sufficient for service redesign yet influenced by factors such as vision and purpose of the organization and the quality of the human factors engaged in redesign. For example, MGM Resorts is publicly emphasizing individual human factors as such: "MGM is working with Shannon Magari as its lead health and safety advisor for this process. Magari is the vice president of health sciences for Colden Corp., an occupational health, safety and environmental firm. Magari obtained her Master of Science from the Thayer School of Engineering at Dartmouth College and received her doctoral training and served as a postdoctoral research fellow at the Harvard School of Public Health, specializing in occupational epidemiology."

To summarize, the extensive redesign perspective theory-in-use holds that, for effective service redesign, the service provider must first identify the new guidelines and comprehend their unique properties/requirements and, second, apply the redesign with a social centric

orientation. It emphasizes the role of internal culture, values, capabilities. Based on this, we offer the following practitioner belief statement:

Proposition. *Effective redesign of service provision can be accomplished if the redesign is driven by internal sense of purpose, with a socio-centric perspective regarding the redesign process.*

4. Study 2: Empirical testing

In this section we proceed to testing the theories-in-use identified in Study 1.

4.1. Traveler response to redesign

Based on our theory-in-use findings, we expect that extensive and partnership-driven hotel's redesign efforts will be positively associated with hotel image. Based on signaling theory, there are two types of signals, costly and less costly (Connelly et al., 2011). A compliance redesign is perceived as a less costly signal, as the reputation of the hotel is not at stake, directly. By being compliant and enacting new policies and procedures as a result of an externally recommended guideline can be interpreted by travelers that the hotel is doing only minimum necessary, in a safe manner. As a result, we do not expect to find a significant relationship between compliance redesign and hotel image. However, the other two strategies are costly signals, the hotels are signaling both adherence to rules, guidelines and regulation, but invest significantly based on their vision, values, and the travelers that are part of their target market. In addition, external validation, certifications and the inclusion of brand names in partnership are designed to offer added assurances that their efforts are spanning multiple areas of concerns. Therefore, these types of redesigns are expected to be perceived positively and have a significant impact on hotel image evaluation. In addition, the partnership redesign is expected to offer the stronger signal as it incorporates multiple signals (internal-from the hotel and external-form the partners). Based on signaling theory, the positive image from the element brand transfers to the host brand under co-branding circumstance (Desai & Keller, 2002). Partnership redesign is expected to have a stronger impact than extensive redesign based on the brand powers of the partners. However, these responses are expected to vary according to traveler response to crisis, which we elaborate on next.

4.2. Traveler response to risks

Past crises, due to natural disasters, illness, or terror, have discouraged travelers to resume planned travel or even plan new ones; however, these crises were historically limited to a specific area. Since Covid-19 was declared as a pandemic, blurring the travelling boundaries, or erasing them, travelers' responses tend to be very different to this crisis (Roser et al., 2020). Travelers not only confront dangers to their health, and invisible fears from the disease but also experience mental distress, loneliness and anxiety from social isolation (Banerjee & Rai, 2020). Literature supports these two different dimensions as traveler crisis response.

First, the various traveler responses towards this crisis can be understood through the Maslow's hierarchy of needs, that identifies five levels of needs and the motivations that determine human behavior (Maslow & Frager, 1987; Ryan et al., 2020; Xu & Chan, 2010). The unaddressed needs become motivation to take action. The pandemic threatens people's health and safety by exposing them to the disease. In turn, the need for safety has been activated (Ryan et al., 2020). People stopped travel to protect themselves and maintain minimum human contact, even when travelling for business purpose (Nanni & Ulqinaku, 2020; Zenker & Kock, 2020).

People also confront the risks of social interaction, and remain social distanced, after imposed "stay-at-home order" and "quarantine" to

prevent spreading the disease (Banerjee & Rai, 2020; Dube et al., 2020). This risk situation deprives people of freedom to connect with others to socialize and increases the needs of love and belonging, as identified in the upper level of needs in the Maslow's hierarchy model (Maslow & Frager, 1987).

Second, according to Terror Management Theory, life-threatening crisis lessens life satisfaction, health, or meaning of life that changes human behaviors in daily lives (Burke et al., 2010; Solomon et al., 1991). The congruency between the Terror Management Theory and Maslow's hierarchy model emphasizes the fundamental human desires to have good health and be a member of society. Lack of health and decreased social interaction, are the two major areas about which people feel the most anxiety and fear caused by Covid-19. The uncertainties of health and social life can be considered the two primary crisis dimensions that people perceive the risks of Covid-19. These two dimensions of crisis reform people' daily lives, creating new norms and changing customer expectations for future travel.

Therefore, by employing strong signals, hotels and other tourism sectors attempt to address uncertainties associated with different types of needs. However, it is more difficult for a regular traveler to discern if the procedures put in place by hotels are appropriate for health concerns, compared to social concerns. Health information require specific expertise to be accurately assessed by the general public. Lack of health expertise is alleviated by the number of signals, including expert signals. Therefore, each additional type of signals (i.e. partnership, brands, certifications) will be having a positive incremental impact on travelers' ability to better assess if hotels are addressing health related issues. On the other hand, travelers do not require additional signals to understand how their social needs are being addressed, as they have their own expertise in what social needs they require. Each additional signal is less likely to have a positive incremental impact on travelers' perceptions when social needs prevail. Therefore, the stronger the signals from the hotels (more policies, brand partnerships), the more they will reduce the uncertainty related to health needs, compared to social needs.

As a result, travelers will more positively evaluate a hotel's image, if the signals from the hotels reduce uncertainty. We argue that the signals incorporated in the complex hotel redesign strategies (beyond simply compliance), are more effective in reducing uncertainty for travelers that are health-focused than social-focused. The conceptual model is displayed in Fig. 2. Thus, we expect that a partnership redesign and an extensive redesign will be more effective to show changes in the standard of re-welcoming guests than a compliance redesign and be related to higher hotel image.

H1. Crisis focus moderates the relationship between the type of redesign and hotel image such that when individuals are focused on health dimension of a crisis (vs. social dimension), the relationship between the type of redesign and hotel image is stronger, as follows:

H1a. Partnership redesign will improve hotel image more than extensive redesign when an individual focuses on health dimension.

H1b. Extensive redesign will improve hotel image more than compliance redesign when an individual focuses on health dimension.

4.3. Moderation effects of risk aversion

As a subjective index, risk aversion indicates an individual's consistent personal attitude to perceive risks over time, reflecting how the individuals are willing to avoid a choice with high risk under threats and crisis situations (Holt & Laury, 2002). Although risk aversion operates differently based on specific risk or socio-demographic profile, it is a critical determinant of attitudes and decisions in tourism (Williams & Baláž, 2015). By reflecting levels of risk acceptance, risk attitude has influenced behaviors, including travel decisions, due to the uncertainty inherent in the future travel (Masiero et al., 2020; Sun, 2014; Wang et al., 2019). Based on risk perceptions, people make different decisions under the same situation. People with high risk aversion value loss more than gains while people with low risk aversion focus more on gains than losses (Pizam et al., 2004). Travel decisions contain inherent risks because it is difficult to predict accurate conditions of future travel, due to the uncertainty of the future. Itineraries may be changed because of personal reasons or uncontrollable factors, such as weather, accidents, and natural disasters (Williams & Baláž, 2015). Categorized as a health-related risk, a natural disaster such as Covid-19, disturbs travel and generates fears of getting infected (Lepp & Gibson, 2003; Lo et al., 2011).

Service redesign signals information about changed protocols, policies and procedures in response to a crisis. Although the impact of the service redesigns differs by strength of the signal, the relationship between the signal and hotel image itself may differ, in addition, by the level of traveler's risk aversion. However, similarly to the hypothesis that hotel redesign strategy will be perceived unambiguously in relation to social-focused needs, the risk aversion is expected to have only minimal to no influence in influencing the ultimate hotel image evaluation for travelers with social-crisis focus. On the other hand, risk aversion will magnify the effects of the redesigns for health-focused travelers. People with high risk aversion have a higher sensitivity, are looking to discern risks and seek more information as a risk reduction strategy. The risk perception derived from worrying plays a significant role in building risk reduction strategies (Chien et al., 2017). The hotels' redesign strategies for providing safe and credible travel environments will be grounds for travelers' risk reduction strategies in planning travel in the pandemic. Thus, they are more likely receptible to the signals from the service redesigns and sensitive to detect the subtle differences between the redesigns. In contrast, people with low risk aversion can tolerate a certain level of risk. In other words, the uncertainty related to travel under the crisis situation may be less impactful to a low risk averse individual than a high-risk averse individual. Considering a hotel's redesign aims to assure lowering risks, the signals from the three types of redesigns may not be distinctive enough for travelers with low risk-aversion. Therefore, we anticipate that the role of risk aversion on
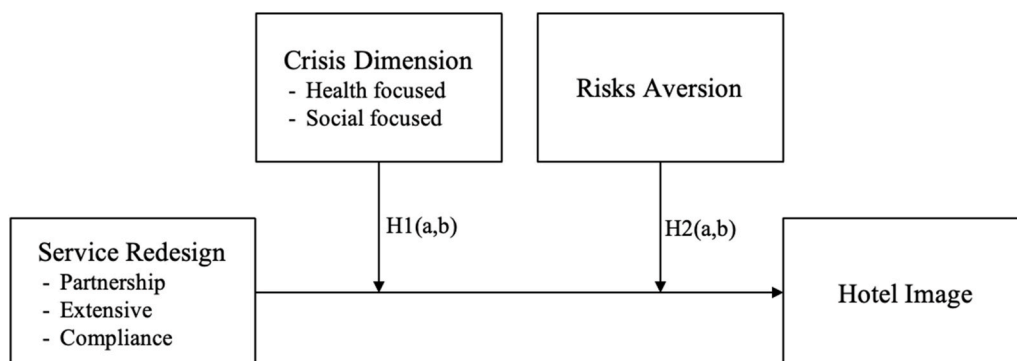

Fig. 2. Conceptual model.

the effects of redesigns on hotel image will be stronger for travelers with a health-focused crisis perception. Thus, we expect that:

H2. Risk aversion will moderate the effects of types of service redesign on hotel image when an individual focuses on health dimension of a crisis (vs. social dimension) such that:

H2a. Partnership redesign will improve hotel image more than extensive redesign for high risk averse individuals.

H2b. Extensive redesign will improve hotel image more than compliance redesign for high risk averse individuals.

4.4. Methodology

4.4.1. Design and stimuli

This research employed a 3 (service redesign: partnership vs. extensive vs. compliance) x 2 (crisis dimension: health vs. social) quasi-experiment design. Based on Study 1, we operationalize the service redesign to refer to the method of innovation that a hotel uses to indicate a newly adopted protocol as a response to the crisis caused by Covid-19. Specifically, we use the compliance redesign as a control group, because it incorporates a baseline change based on legal requirements. The extensive redesign is defined as internal innovation response to the crisis, mostly reflecting personnel changes. The partnership redesign indicates innovation incorporating external sources and is described as partnership to facilitate novel services in response to the crisis. The stimuli include text to describe how the service redesigns were developed, stimuli developed based on the statements that hotels have declared to use in coping with the Covid-19, and revised to emphasize key factors in each construct of service redesign. The crisis dimension is defined by individuals' internal source of crisis that has a great impact on their daily lives. The health-focused crisis is defined as the situational perception that an individual is concerned about health and safety the most under their current circumstance. The social-focused crisis is defined by the situational perception of being distressed by social isolation and restricted social interaction.

4.4.2. Sample

A total of 388 participants was recruited from Amazon Mechanical Turk (MTurk) and participated an online survey. The panel data from MTurk shows a diverse nationwide population and is a valid online recruitment tool (Casler et al., 2013; Goodman & Paolacci, 2017). With 57–74 participants in each condition, the sample size is sufficient to yield statistical power greater than 0.95. to detect medium sized effects (Cohen, 1992). Participants were qualified when declared to experience a hotel stay within the last 12 months and be over 18 years old. Approximately 53% of participants were female; 57% were married; 32% had a household income between US$51K-$74K; and 74% indicated their ethnicity as Caucasian. The age range between 25 and 34 was 25.8%, 35–44 was 24.2%, and 45–54 was 20.9%.

4.4.3. Procedures and measures

Once participants consented to the study and were qualified, they were randomly assigned to one of three experimental conditions. First, scenario to describe a hypothetical statement of service redesign as a response to the Covid-19 was displayed. Following the scenario, participants were asked to rate the hotel image based on the displayed information. We measured hotel image as a five-items 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) (Riordan et al., 1997). Next, a question "I will travel within the US (international) for a vacation in:" was displayed for future travel time frame with multiple choices ranging from this month to more than a year later. Then, to measure crisis dimension, participants were asked to indicate "how is the Covid-19 situation primarily affecting you" using binary choice between "social perspective" and "health perspective." Risk aversion was assessed through a four-item measure, in order to investigate the impact

of this personal trait to judge service redesign (Burton et al., 1998). Demographic and manipulation check questions concluded the survey.

4.5. Results

For manipulation check, participants were asked to recall the stimulus, the statement of each service redesign that was exposed at the beginning of the survey. The manipulation was effective, participants accurately recalling the topic of the statements ($\chi^2(4) = 266.11$, p < .001).

4.5.1. The effects of service redesign by crisis dimension

A two-way analysis of variance was performed to examine the effects of service redesign responses to the crisis on hotel image, by crisis dimension. The analysis revealed main effects of service redesign ($F_{2,382} = 6.74$, p = .001, $\eta_p^2 = .034$) and crisis dimension ($F_{1,382} = 7.451$, p = .007, $\eta_p^2 = .019$) on hotel image. A Bonferroni follow-up test on redesign indicates a significant difference between compliance redesign (5.25) with other redesign (extensive = 5.60 and partnership = 5.64), but no statistical difference between extensive and partnership redesign. The main effect of crisis dimension on hotel image was greater with health-focused (5.63) versus social-focused crisis (5.36).

There was an interaction between service redesign and crisis dimension on hotel image ($F_{2,382} = 2.96$, p = .053, $\eta_p^2 = .015$). The results are displayed in Fig. 3. The follow-up tests were conducted at each level of crisis dimensions to identify the source of the interaction. When travelers focused on the social dimension, no significant difference between the types of service redesign on hotel image ($F_{2,184} = .898$, p = .409) was found. In contrast, service redesigns significantly improved hotel image when crisis dimension was health, supporting H1 ($F_{2,198} = 8.90$, p = <.001, $\eta_p^2 = .083$). A Bonferroni post-hoc test indicated that partnership redesign significantly improved hotel image (5.92) compared to compliance redesign condition (5.24). Although the highest level of hotel image was achieved by applying the partnership redesign under the health-focused dimension, there was no statistical significance between partnership and extensive redesigns, thus H1a was not supported. The effects of extensive redesign on hotel image (5.71) was significantly higher than compliance redesign, supporting H1b.

The results included the main effects of service redesign ($F_{2,382} = 6.74$, p = .001, $\eta_p^2 = .034$) and crisis dimension ($F_{2,382} = 7.45$, p = .007, $\eta_p^2 = .019$). The hotel image was significantly improved, employing partnership redesign (5.67) and extensive redesign (5.61) versus compliance redesign (5.25). A health-focused individual perceived hotel image higher (5.66) than a social-focused individual (5.36).

4.5.2. The effects of risk aversion on service redesign by crisis dimension

The effects of service redesign on hotel image were further investigated to test the moderated moderating effect of risk aversion, as a function of crisis dimension. A series of PROCESS analyses was performed using a Pick-a-Point approach (Hayes, 2017). Similar to the result of the interaction between service redesign and crisis dimension, there was no moderating effect of risk aversion when people focused on the social dimension of the crisis. However, hotel image as a result of adopting different redesign strategies significantly improved in the crisis health dimension condition, supporting H2. The results are displayed in Table 2.

Under the health-focused dimension, partnership redesign significantly influenced hotel image among people with relatively high (t = 4.64, p < .001) and moderate risk aversion (t = 2.82, p = .005) but had no impact among relatively low-risk averse (t = −.46, p = .64). Extensive redesign had a significant impact on hotel image among relatively high-risk averse (t = 3.79, p < .001), but it was not significantly related to moderate (t = 1.40, p = .163) or low-risk aversion (t = −1.09, p = .276). As displayed in Fig. 4, extensive redesign improved the hotel image, but partnership redesign showed the best outcome when risk aversion was high. Therefore, H2a and H2b were supported. On the
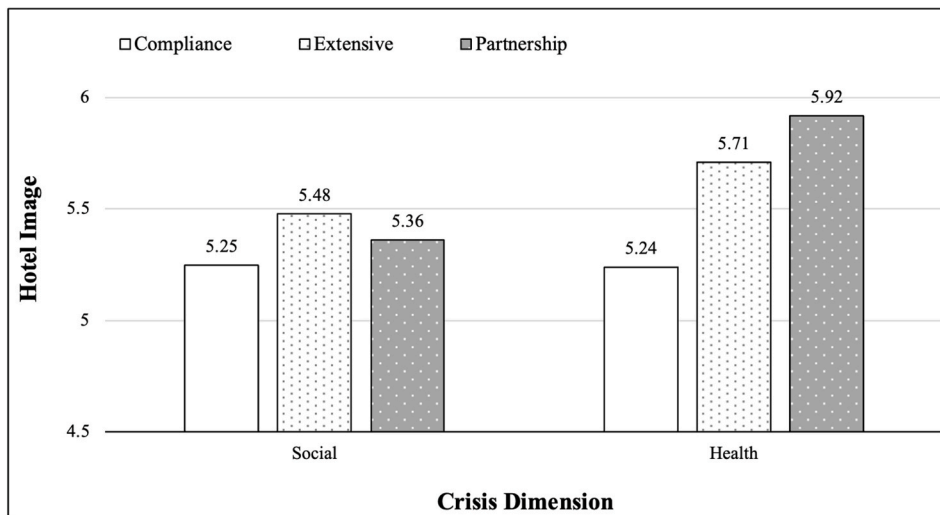
Fig. 3. The effects of service redesign by crisis dimension.

Table 2
The moderating effects of risk aversion in a health-focused dimension.

	B	SE	t	LLCI	ULCI
Constant	5.88	.36	16.41	5.18	6.59
Redesign					
Partnership	-.66	.48	−1.38	−1.60	.28
Extensive	-.40	.46	-.87	−1.30	.50
Risk	-.13	.07	−1.90+	-.26	.00
Risk x Redesign					
Risk x Partnership	.23	.09	2.51**	.05	.41
Risk x Extensive	.23	.09	2.54**	.05	.39

Note. $F_{5,195} = 5.50$, p < .001, $R^2 = .12$; **p < .01; +p < .10.

other hand, hotel image was not significantly different by service redesign when risk aversion was low.

### 4.5.3. Post-hoc analysis – the effects of service redesign by gender

As a post-hoc analysis, the effects of service redesign were analyzed by gender, which often indicates a distinct difference in travel perception. The result of an ANOVA showed significantly different effects of service redesign depending on gender ($F_{2,382} = 2.73$, p = .067, $\eta_p^2 = .014$). As displayed in Fig. 5, the analysis observed the significant simple effect of service redesign for female ($F_{2,202} = 7.21$, p = .001, $\eta_p^2 = .067$) and a marginal effect of service redesign for male ($F_{2,180} = 2.906$, p = .057, $\eta_p^2 = .031$). Females perceived hotel image higher when a hotel implemented partnership redesign (5.80) versus compliance redesign (5.20). On the other hand, males had higher hotel image when extensive redesign (5.70) was adopted, than compliance redesign (5.30).

4.5.4. Post-hoc analysis – the effects of crisis dimension on future travel timeframe

This study investigated future travel timeframe that anticipated time period of future travel for a vacation after the current crisis circumstance. Nonparametric statistics using a Chi-Square Test was used to examine the effects of innovation and crisis dimension on future travel timeframe. The results indicated that the future travel timeframe was significantly different by crisis dimension ($\chi^2(5) = 18.44$, p = .002), but there was no significant impact of service redesign ($\chi^2(10) = 12.07$, p = .280). As shown in Fig. 6, people with the social-focused crisis were willing to travel in a shorter timeframe than health-focused people.

The future travel timeframe was different depending on whether it is domestic or international travel (See Fig. 7). The pattern of future travel timeframe for domestic travel was similar to the timeframe for leisure travel. The timeframe for the leisure travel within the U.S. was
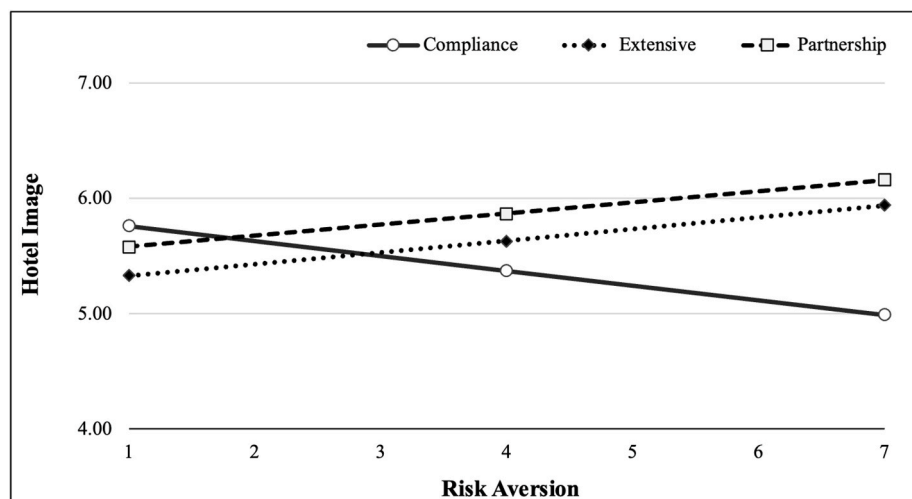
Note. In a health-focused dimension
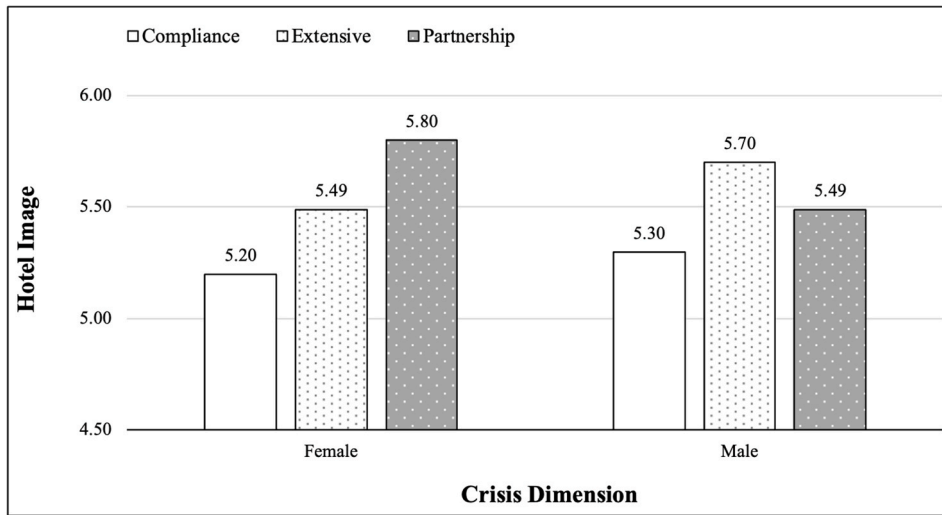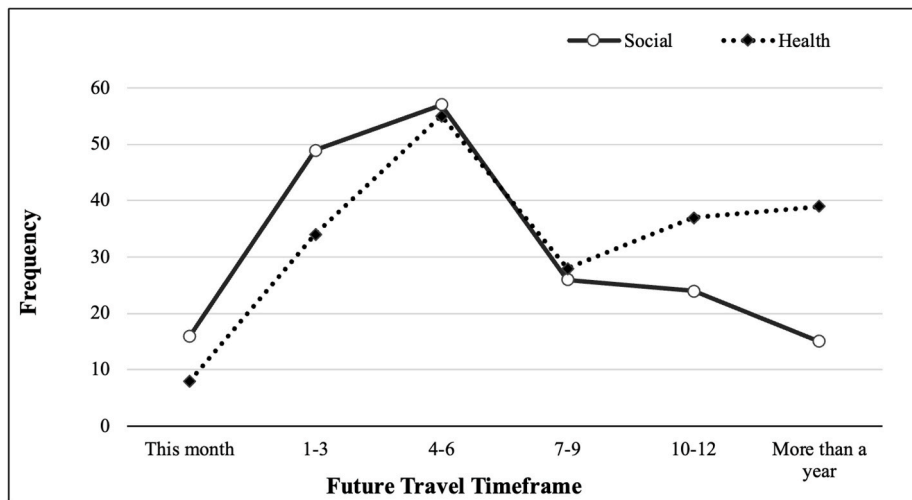
Fig. 4. The moderating effects of risk aversion.

Fig. 5. The effects of service redesign by crisis dimension.

Note. Future travel timeframe in month

**Fig. 6.** Future Travel Timeframe by Crisis dimension.

significantly different depending on crisis dimension ($\chi^2(5) = 11.57$, p = .041), indicating significantly shorter travel timeframe for social-focused individuals while longer timeframe for health-focused individuals. On the other hand, there was no difference between the crisis dimensions on the international travel timeframe ($\chi^2(5) = 2.56$, p = .768). For international travel, the majority of people in both groups were willing to travel more than a year later.

5. Discussion

Across two studies we were able to construct and test realist-based theories that describe the redesign strategies in the tourism and hospitality sector. We first used a grounded theory approach to uncover the different types of theories-in-use that pertain to the redesign of hospitality services enacted to respond to the post-Covid-19 context. Through our study, we identified and described three enacted service redesign theories-in-use. Our findings point toward three types of strategies that are prevalent: redesign based on externally imposed compliance conditions, redesign built on internal capabilities and brand vision, and redesign with an external partner. Each of these have been applied. Then, in our second study, we used an experiment to test the three theories. Our results clearly show that redesign strategies that build on

external partnerships and internally driven capabilities and vision are more effective in informing customers about the hotel image of the hospitality provider.

This is important, because in times of crisis, it is beneficial to go above and beyond mere compliance, but address externally imposed rules, policies and practices while incorporating either expert advice or by building on idiosyncratic brand advantages. Moreover, in investigating how the different crisis dimensions may affect brand image, our results show that the distinct health focus of customers evaluating hotel image is important. Specifically, if the customer base is focused on social elements of a crisis, then service redesign strategies in communication do not have a significant effect on hotel image. Moreover, we considered customers level of risk aversion in evaluating the hotel image following a hospitality redesign. Similarly, the social focus of the customer obscures relating the redesign efforts to hotel image. Conversely, the health focus of the customer is significantly related to hotel image as the outcome of the redesign. Our results show that higher level of risk aversion is related to a positive hotel image as results of both internally driven and partnership driven redesign strategies. In addition, gender, which is significantly related to travel intentions, showed significant interactions with the type of redesign. While males perceive a higher hotel image in association with internal extensive redesign, females
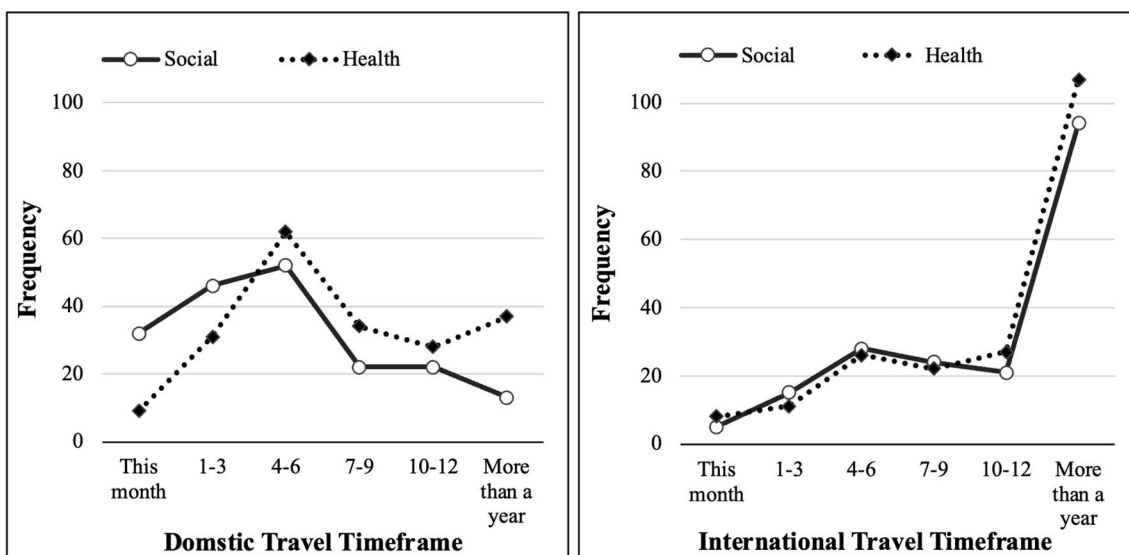
Note. Future travel timeframe in month

Fig. 7. Domestic & international travel timeframe.

react strongly to external partnership redesign. Finally, we used a post-hoc analyses to understand how the redesign efforts relate to more actionable behavior, such as future travel time frame. Our results show that the crisis dimension, but not the redesign effort, explains customers' intention to travel in a short time frame. Customers who are willing to travel in shorter time frame are socially focused, rather than health focus, especially regarding internal travel, while international travel is postponed further into the future, regardless of the crisis dimension.

Taken together, our results paint an interesting and revealing picture. Under an unexpected crisis, there are different service responses, and, these may include an overhaul of the hospitality service. Unfortunately, the redesign efforts can go unnoticed, depending on the manner customers relate to a crisis. Understanding the most effective way to approach a redesign strategy and how to communicate about it can boost the hotel image and encourage travelers to resume travel soon.

6. Implications

6.1. Theoretical implications

This research makes several theoretical and practical implications. We contribute to the theory in multiple ways: first, we contribute to the under-researched area of service redesign, by presenting the results of a grounded theory emphasizing the redesign strategy directions: extensive, compliant, external-partnership. Since the seminal work of Berry and Lampo (2000) there are few efforts dedicated to building theory in this area. This particular insight can be very useful for future development of redesign frameworks in the travel and tourism research. Second, we provide a test of the theory by following the grounded theory insights into implementing a real-life scenario-survey. Our understanding of the theories was thus supported through our results, which indicated that certain strategies for redesign are optimal. Third, we further expanded our theory by investigating the boundary conditions under which redesign strategies are more effective. We showed that redesign strategies work differently for crisis dimension (health versus social), risk aversion (high versus moderate vs low), and gender. Finally, we expanded the nomological focus of hospitality service redesign by investigating a different dependent variable (time frame for future travel).

Methodologically, we contribute to the literature in hospitality redesign by applying a novel approach to build theory, the theory-in-use to this area. We argue that under the contextual conditions of

investigating a global-level response to a crisis, a realistic-driven approach is the most effective way to extract and contribute to theory building for the future.

6.2. Practical implications

In addition to theoretical contributions, we contribute to the practice of hospitality in several important ways. We draw attention to the disconnect between the redesign strategies and customer focus. As many times in practice, externally imposed policies, practices or procedures do not have a business customer mindset. Following and implementing these types of strategies can really shift focus to the company rather the final customer, which can prove detrimental in the long run. Adopting a redesign strategy focused around internal vision and capabilities or turning to a partnership-external redesign is more likely to maintain the customer focus. Thus, these signals are powerful in communicating to the customers valuable information. However, what is very interesting, is that these efforts must not be taken for granted, as in the customers may interpret them through the lens of their own focus. Thus, from a segmentation point of view, understanding the health or social focused crisis of the customer segments, communication and emphasizing communication on these changes is critical. Our result is interesting and important because, while all tourism operators invest and redesign, in this particular case under compliance, if the customers do not care about health, these efforts are going unnoticed. In many cases, service redesign, either volitionally or under compliance, is an effortful and costly operation. Depending on the communication effort, then the hospitality operators can alleviate some of these costs through final intangible benefits, such as improved brand and hotel image. If the hospitality operators are not able to find a manner to better communicate to social focused customers then they might miss recovery opportunities. Conversely, depending on the customer base, the service providers must de-emphasize and reduce costly communications to un-responsive customers (i.e. socially focused).

7. Limitations and future research

As with any other effort, our study is not without limitations. We, however, argue that our limitations may offer the grounds for additional work in the under-researched area of tourism redesign, especially under the externally imposed compliance context. Future research should understand how to better communicate various redesign strategies and

create a fit measure to better capture customer crisis orientations. A service redesign strategy is applicable to the broad context in the hospitality and tourism industry, such as cruise, airline or gaming. Although this research identified three types of redesign in terms of a hotel sector, distinctive aspects might be discovered in other contexts. Future research to broaden the theoretical foundation of this research will provide a big picture to understand the concept. In addition, longitudinal data, or to a better extent, behavioral data should better relate aspects of the redesign strategy that is most effective over time. As the pandemic lasts longer, the service redesign strategies may be extended or transformed according to the changes in the situation, so does customer crisis orientation. Our work is offering interesting opening for future research, such as answering questions about the underlying dimensions of redesign strategies and identifying the best travel and tourism performance metrics best relate to these.

Impact statement

We suggest an innovative approach to analyze the effective strategies to operate business as a response to the changes in the external environment. This research provides a theoretical contribution to understanding how tourism sector strives to re-envision the process of their operations to recover from the profound impact of the Covid-19 crisis. Using a grounded theory approach to uncover the realistic 'theories-in-use" of crisis response, this research uncovered three types of service redesign strategies (compliance, extensive, and partnership redesign) in the tourism and hospitality sector. Based on the findings of the qualitative study, a quasi-experimental study found that travelers perceive the hotels' service redesign differently, based on their responses to the perceived crisis (social versus health focus). The research highlights the importance of travelers' crisis dimension to build travelers' perception toward the service redesign that affects hotel image.

Credit author statement

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Declaration of competing interest

None.

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